# Exhibit 1.4



Safe, Abundant Drinking Water.

## **Service Provider and Environmental Steward**

Milwaukee has an abundant water resource in Lake Michigan, a supply that contributes to an attractive and healthy environment. Lake Michigan water is treated for drinking, used and returned to the lake. As a steward of this resource, the Milwaukee Water Works uses sustainable practices such as supply side conservation, limiting leaks and preventing water waste, energy conservation and operational efficiency. The sustainable practices ensure the long-term availability of safe and affordable drinking water with recognition that other water uses (e.g., agricultural, recreational) and other priorities (e.g., environment, economic prosperity and social welfare) must be considered. Outreach to residential consumers focuses on efficient use of the water resource.

## The need for efficiency and water savings

Water use has steadily declined in the past four decades, the result of factors that affect all customer classes:

- Wet industry such as brewing, leather tanning, and automotive and heavy equipment manufacturing have closed.
- Large water customers apply ever more efficient processes that use less water.
- Residential customers conserve without active promotion of conservation, using about 2% less water each year.
- Consumers purchase high-efficiency appliances and plumbing fixtures that use less water.

The decline in water use appears in these Milwaukee Water Works statistics:

- The amount of water sold dropped from 58 billion gallons in 1976 to 33 billion gallons in 2009.
- From 2006 to 2009, water use decreased 6%.
- The Milwaukee Water Works pumps about one-third its total rated capacity of 380 million gallons per day (MGD) (1/3 = 126 MGD). Average daily pumpage for 2009 was 109 MGD. The utility could provide an additional 125 MGD (total 234 MGD) while maintaining an adequate safety margin to provide water for emergencies.

Less water sold means declining revenue while costs to treat and pump drinking water increase

• Costs to treat any amount of water continue to increase for electric power, fuel, chemicals, wages and benefits, and maintenance of aging infrastructure.

As water use and revenues fall, the Milwaukee Water Works has focused on reducing costs and operational efficiencies.

- Automation and downsizing in the early 2000s cut utility positions from 535 to 300. The reorganization
  was recognized with a national Association of Metropolitan Water Agencies award in 2003.
- The smaller organization remains in place.
- Non-critical positions that open with employee retirements or resignation are not filled.
- Non-essential overtime was eliminated.

## **Supply Side Conservation**

Milwaukee's water supply and the capability to treat and provide safe water greatly exceed the demand, so the utility has adopted supply side conservation to save water and energy. The Milwaukee Water Works saved over one billion gallons alone from 2006 to 2008. It would take decades of conservation by the utility's customers to equal this amount of water savings.

Here are some of the supply side conservation efforts:

- At its two water treatment plants, staff modified the operation of filters by extending the length of the
  filter runs and reducing the volume of water used to backwash the filters. This provides a more efficient
  operation while maintaining high quality treated water. The results include ongoing savings of 165
  million gallons of treated water each year, as well as energy savings associated with less frequent use of
  the large washwater pumps.
- The invention of a tank rinsing device to dilute residual in sodium hypochlorite storage tanks before inspection resulted in reducing water use from 95,000-150,000 gallons per process to 19,000 gallons. This saves about 500,000 gallons of treated water per year.
- Water leaks in the distribution system have been limited through a number of activities. A multi-year leak survey of the entire system was completed in 2008. Scheduled preventive maintenance includes targeted leak surveys to identify non-surfacing water leaks.
- Hydrant and water main flushing programs use an amount of water necessary only to reach specified
  water quality parameters. Rather than flushing for a specified length of time, field personnel use
  turbidimeters to determine when the water turbidity has reached the proper level and to stop flushing.
- The utility pressure-tests new and replacement water mains on delivery and before construction to verify they will not leak when put into service.
- A technique was implemented throughout the Department of Public Works to reduce water waste. To
  compact new soil covering underground utility trenches, crews would flood the soil with water. Now,
  they use a mechanical compactor to complete the backfill, minimizing the amount of water that drains
  into the sewer system. The saved water is estimated at 20 million gallons per year.

## **Stewardship Partners**

The Milwaukee Water Works partners with other agencies to help keep the source water clean.

- To help reduce sewer overflows into Lake Michigan, water flushing activities for mains and hydrants in the combined sewer area are scheduled away from rainy periods to assist the Milwaukee Metropolitan Sewerage District (MMSD) avoid or decrease overflows.
- Since 2007, the Milwaukee Water Works has sponsored the river skimmer, which removes an average 70 tons of floating debris each year from the Milwaukee and Menomonee Rivers. The skimmer is a collaborative effort with the Milwaukee RiverWalk District, MMSD and the Port of Milwaukee.
- The Milwaukee Water Works joined the U.S. Environmental Protection Agency (EPA) WaterSense program in 2007 and the Public Service Commission of Wisconsin (PSC) Conserve Wisconsin program in 2008 to protect water and energy resources. The utility pledged to continue to make operations more water-efficient and to provide customers with water efficiency information.
- The Milwaukee Water Works received two American Water Works Association (AWWA) awards for water efficiency in 2008.
- As a member of the Milwaukee Water Council, the City of Milwaukee and the Milwaukee Water Works
  provide technical support to preserve the region's freshwater resource and promote water technology
  business and research, and education of future water talent.

#### **Demand-side Conservation**

The Milwaukee Water Works has developed demand side, or consumer, conservation programs to emphasize "Use Water Wisely – Control Water Costs." The utility advocates for sensible use of water, reducing water waste and overuse, and helping consumers get the best value for the water they use.

Milwaukee Water Works customers have given the utility a head start on water saving. Residential water use has steadily declined even before active promotion of water conservation in Milwaukee.

• For Milwaukee Water Works customers, the daily per person, indoor and outdoor use, in 2009 was 47 gallons (calculated using water sold to residential customers only). From 2005-2009, the five-year average was 50 gallons. This is well below the national average. The AWWA reports nationally, daily per

person indoor only use was 69.3 gallons while daily per person, indoor and outdoor use, was 171.8 gallons.

### Here are some of the demand-side conservation activities:

- The Milwaukee Water Works is collaborating with Clean Wisconsin to assist with reducing waste and
  overuse of water, and conserving the water resource. The 2010 public education program focuses on
  finding and fixing household leaks to "Use Water Wisely and Control Water Costs."
  - Two new instructional EPA WaterSense worksheets, modified for Milwaukee Water Works customers, offer easy-to-use information about checking for, finding and fixing water leaks.
  - A new colorful brochure, Use Water Wisely-Control Water Costs, is available in print and on the utility website, www.milwaukee.gov/water.
  - A "buck slip" insert in the first and second quarter Municipal Services bills provides Use Water Wisely-Control Water Costs information, in English and Spanish, to 168,000 customers.
  - A new section of the utility website, Use Water Wisely, offers printable worksheets and links to water-saving resources for adults and children.
  - Outreach materials advise customers to track and compare their water use by accessing their account online at the utility's website.
  - All materials are distributed to City of Milwaukee agencies such as public libraries, health centers and permit centers, city cable TV, and elected officials for newsletters and websites.
  - Customer Service Center employees offer to mail worksheets, brochures and a toilet leak detection dye tablet packet to customers who inquire by phone regarding high water use or high sewer charges. Visitors to the center are offered the same. Customer Service Representatives on average advise over 2,000 customers each year about unusually high water use and advise them on how to use the water meter to check for leaks. These activities lower customer water and sewer bills and further decrease wasted water.
  - The billing system identifies accounts with unusually high water use; staff mail letters to these customers advising them of the situation and offer advice about finding and repairing leaks.
  - Meter Services employees provide literature and dye tabs to customers when performing inhome leak investigations generated by Customer Service, and as employees replace meters. There are over 1,000 of these home investigations each year.
  - Staff prepared a series of letters to send to property owners with extraordinarily high water use that could indicate underground leaks on the owner's property. The letters ask owners to contact the utility for an internal property inspection; there is also information about resources to help property owners pay for major repairs.
  - The 2009 EPA-required water quality Consumer Confidence Report, mailed to all customers in the first quarter, featured Use Water Wisely information.
  - The Milwaukee Water Works collaborated with an MMSD educational outreach program to provide student Fix a Leak worksheets and toilet leak dye tabs to school classrooms in February.
- As an EPA WaterSense partner, the Milwaukee Water Works has participated in the national "Fix a Leak Week" promotion since its inception in March 2009. The inaugural event was led by Ald. Michael Murphy, featured in a media campaign to encourage residents to conduct home water leak surveys. Highlights of the 2010 program were the new Fix a Leak worksheets and displays at City Hall, the Zeidler Municipal Building, and the Wisconsin State Office Building.
- A public education campaign, in its sixth year in 2010, has eliminated the waste of millions of gallons of treated water by reducing illegal hydrant openings during hot weather. Treating that amount of water only to have it drain into sewers is expensive for all stakeholders and a loss of a precious resource. Water wasted due to illegally opened hydrants has decreased from an estimated 447 million gallons in 2006 (745 hydrants) to 99 million gallons in 2007 (165 hydrants) to 31 million gallons of water in 2008 (52 hydrants), and 63 million gallons in 2009 (105 hydrants).

- The Milwaukee Water Works has installed over 2,300 hydrant-locking McGard devices in areas with high repeat hydrant openings. At Milwaukee school playground Cool Spots, the utility provides sprinkler devices and cool water using fire hoses hooked to hydrants that are supervised.
- During cold weather months, the utility encourages customers to protect water pipes and meters from freezing. Outreach includes news releases and sharing information with city elected officials and agencies for distribution.
- Commercial Meter Readers manually read the meters of the 1,000 largest customers on a monthly basis and compare current use to past use. They identify changes in seasonal or monthly patterns and report discrepancies for corrective action.
- Meter Services staff participate in GreenPlumbers training on new water-saving technology.

## **Reducing Energy Use**

The Milwaukee Water Works is continually looking to reduce electrical energy use throughout its operations.

- Energy efficient interior and exterior lighting is phased in at the water treatment plants. At the
  Linnwood Water Treatment Plant, 500-watt incandescent bulbs were replaced with 85-watt compact
  fluorescents. Astronomical timers, which adjust settings as daylight periods change, were installed to
  ensure sufficient lighting for the safety of personnel in the filter galleries. Motion sensor activated
  lighting was installed to turn on lights as needed and turn them off a short time later.
- At the Howard Avenue Water Treatment Plant, lighting needs range from 24-hour exterior and interior to rooms and facilities that require light only when staff is working in the area. An energy audit and subsequent replacement of lighting fixtures reduced the use of 497 incandescent, quartz, and fluorescent lamps and light bulbs to 226 high efficiency bulbs and lamps. The "shedded load" of electrical use was 36,027 watts compared with the previous use of 53,050 watts using old lighting technology (calculated on a 10-12 hour day). A similar project is planned for the Linnwood plant.
- Emphasis is placed on using the most energy efficient pumps for the situation to keep water flow consistent during peak and lower demand times. For example, electrical energy use at a booster station was lowered by installing a variable frequency drive on a station pump.
- A replacement heating, ventilating and air conditioning unit installed in 2008 at the Meter Services Shop uses digital controls instead of pneumatic, resulting in electrical energy savings.
- Energy efficient windows are being installed at the Linnwood plant maintenance building. Plans call for a facilities study and energy audit of heating, ventilating and air conditioning.

#### **Additional Sustainable Practices**

- Biodiesel fuel is used as possible in Milwaukee Water Works vehicles and equipment that require diesel fuel. A phase-in program begun in 2006 has resulted in the use of B20 biodiesel fuel in 2008 and 2009.
   Hybrid electric vehicles and diesel equipment replacing gasoline units, plus ethanol E85 capable equipment, is purchased whenever possible.
- Recycling includes paper, plastic, glass, and aluminum, as well as materials such as batteries and fluorescent lighting, and concrete and asphalt at construction and maintenance sites.
- The utility renovated the former Kilbourn Reservoir, in a multi-year public involvement project, into a park by 2008. The earth-friendly design of the park reduces storm water pollution by returning 3.63 acres of pavement to water-absorbing vegetation.
- A "Drink Locally" campaign each June promotes the sustainable practice of drinking tap water, with the distribution of table tents urging consumers to "Fill at the Tap."
- The Milwaukee Water Works helped produce the "Simple Solutions to Water Pollution" brochure created by Milwaukee Water Partners, a consortium of regional environmental groups and the MMSD.

## **About the Milwaukee Water Works**

The Milwaukee Water Works is a national leader in providing high quality drinking water and in monitoring water quality.

The water utility is owned by the City of Milwaukee. It is a non-profit, self-financing enterprise that pays its operating expenses from revenues generated from the sale of treated water. By law, revenues must be used to pay for operating costs, capital improvements, and outstanding debt.

Policy is set by the Mayor and Common Council. The utility is regulated by the U.S. Environmental Protection Agency (EPA) and the Wisconsin Department of Natural Resources (DNR) for facilities, operations, and water quality; and the Public Service Commission of Wisconsin (PSCW), for accounting and rates.

4/22/10